International finance in general equilibrium*

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Summary

Our purpose in this paper is to unify international trade and finance in a single general equilibrium model. Our model is rich enough to include multiple commodities (including traded and nontraded goods), heterogeneous consumers in each country, multiple time periods, multiple credit markets, and multiple currencies. Yet our model is simple enough to be effectively computable. We explicitly calculate the financial and real effects of changes in tariffs, productivity, and preferences, as well as the effects of monetary and fiscal policy.

We maintain agent optimization, rational expectations, and market clearing (i.e. perfect competition with flexible prices) throughout. But because of the important role money plays, and because of the heterogeneity of markets and agents, we find that fiscal and monetary policy both have real effects. The effects of policy on real income, long-term interest rates, and exchange rates are qualitatively identical to those suggested in Mundell-Fleming (without the small country hypothesis), although our equilibrating mechanisms are different. However, because the Mundell-Fleming model ignores expectations and relative price changes, our model predicts different effects on the flow of capital, the balance of trade, and real exchange rates in some circumstances.

1. Introduction

International trade is most commonly analysed via general equilibrium theory (see e.g. Bhagwati and Srinivasan, 1983;  

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Frenkel and Razin, 1992; Svensson and Razin, 1983), with its three-legged apparatus of agent optimization, market clearing (i.e. perfect competition with flexible prices), and rational expectations. International finance, on the other hand, has traditionally been studied via a potpourri of models and methodologies (see e.g. Blanchard and Fisher, 1989; Dornbusch, 1976; Dornbush, 1988; Flemming, 1962; Mundell, 1968), in which some markets clear and others do not, some prices are flexible and others are not, some expectations are rational and others are formed as if prices were flexible even when they are not, and agent activity is described not by optimization but by behavioural equations.

The traditional international finance literature following Mundell and Fleming recognizes the fundamental importance of interactions among multiple markets, and its general equilibrium character. But, like the mainstream, Keynesian macroeconomics literature from which it derives, it usually repudiates one (and sometimes all) of the three legs of a genuine, full-bodied general equilibrium approach. The alternative international finance literature inspired by Lucas (Grilli and Roubini, 1991; Grilli and Roubini, 1992; Lucas, 1982) does maintain all three hypotheses of agent optimization, market clearing, and rational expectations. But by adopting the auxiliary hypothesis of an exchange economy with a single “representative agent” who is obliged to put his entire endowment up for sale (to himself!), this literature a priori eliminates many interactions between the financial and real sectors of the economy.

Our purpose in this paper is to unify international trade and finance in a genuine general equilibrium model. Our model is rich enough to include multiple commodities (partly to allow for relative price changes and partly in order to distinguish between traded and nontraded goods), heterogeneous consumers in each country, multiple time periods, short-term and long-term assets, and multiple currencies. Yet our model is simple enough to be effectively computable.

We believe that international finance cannot properly be separated from international trade because the most interesting financial questions invariably turn on the interactions of real and financial variables. For example, if a country reduces its tariffs, or becomes more productive, or more impatient, will its currency appreciate or depreciate? What will happen to income, to short- and long-term interest rates, to price levels and to the rate of inflation, to the real terms of trade, and to the balance of trade? What will happen if a country’s government, or a trading partner’s government, spends more, or prints more money, or increases the rate at which it expands its money supply?
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